

REMARKS

Claims 1-28 were pending in this application. This paper amends claims 1, 2, 6, 23, 25, 27, and 28. This paper introduces new claims 29 and 30. After entry of this amendment, claims 1-30 will be pending in this application and are presented for consideration.

Amendments to the Claims

Claim 1 has been amended to recite that the reference solution comprises 7-15% of a water soluble polymer by weight, 6-10% of a glycol by weight, and 5-10% of a polysaccharide by weight. Support for this amendment is found in the specification at page 2, lines 27-29 and at page 7, lines 4-16.

Claims 2 and 6 have been amended to correct errors in punctuation.

Claim 23 has been amended to recite that the reference solution comprises 7-15% polyethylene glycol by weight, 6-10% ethylene glycol by weight, and 5-10% dextran by weight. Support for this amendment is found in the specification at page 7, lines 4-16.

Claim 25 has been amended to recite that the reference solution comprises 7-11% polyethylene glycol by weight and 5-9% dextran by weight, wherein the molecular weight of the dextran is between 8,000 and 40,000. Support for this amendment is found in the specification at page 2, lines 27-29 and at page 7, lines 13-16.

Claim 27 has been amended to recite obtaining a signal from the instrument corresponding to a conductivity of the reference solution and adjusting the instrument so that the signal obtained from the instruments is representative of the conductivity corresponding to the known hematocrit level. Support for this amendment is found in the specification at page 9, lines 18-30.

Claim 28 has been amended to recite obtaining a signal from the instrument corresponding to a conductivity of a known concentration of one or more analytes in the reference solution and adjusting the instrument so that the signal obtained from the instrument is representative of the conductivity corresponding to the known concentrations of the one or more analytes. Support for this amendment is found in the specification at page 10, lines 7-25.

Claims 29 and 30 are introduced to recite that the dextran has a molecular weight ranging from about 8,000 to about 40,000. Support for these new claims is found in the specification at page 7, lines 1-3.

Applicants submit that these amendments to the claims introduce no new matter.

Rejection of Claims 27 and 28 under 35 U.S.C. § 112, Second Paragraph

Claims 27 and 28 stand rejected under 35 U.S.C. § 112, second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

Firstly, the Office action suggests that the term "signal" in both claims 27 and 28 is indefinite since it is not clear what type of signal is obtained. Accordingly, claim 27 has been amended to clarify that the signal obtained corresponds to a conductivity of a reference solution. Claim 28 has been amended to recite that the signal corresponds to a conductivity of a known concentration of one or more analytes in the reference solution. Applicants believe that these clarifying amendments overcome the Examiner's rejection. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 27 and 28 under 35 U.S.C. § 112, second paragraph.

Rejection of Claim 25 under 35 U.S.C. 102(b)

Claim 25 stands rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Chait *et al.* (U.S. Patent No. 6,136,960, "Chait").

Claim 25 recites a reference solution comprising 7-11% polyethylene glycol by weight and 5-9% dextran by weight, wherein the dextran has a molecular weight ranging from about 8,000 to about 40,000. The reference solution has a conductivity corresponding to a known hematocrit level.

Chait teaches a method of determining the ratio of different molecular forms of a protein composition in a multi-component mixture (col. 3, lines 15-17). The method uses, for example an aqueous two-phase system containing 8% polyethylene glycol by weight and 14% dextran by weight (col. 3, lines 35-41). Chait's dextran has a molecular weight of 78, 000 (col. 3, lines 40-41).

Applicants submit that Chait fails to anticipate Applicants' claimed invention because Chait does not teach or suggest a reference solution containing 7-11% polyethylene glycol by weight and 5-9% dextran by weight. Further, Chait also fails to teach dextran having a molecular weight ranging from about 8,000 to about 40,000. For example, Chait discloses dextran that has a molecular weight of 78,000 MW or 500,000 MW, far beyond Applicant's claimed range (col. 3, lines 40-41; col. 13, lines 31-32).

In addition, Applicants submit that Chait fails to teach a reference solution having a conductivity corresponding to a known hematocrit level. Chait's mixture is assembled with specific reagents, concentrations, and molecular weights to achieve a solution for use in quantitative analysis of the ratio of different molecular forms of a protein composition (col. 3, lines 14-16). Chait's solution is therefore useful for an application unrelated to Applicants' claimed invention.

Not only are Chait's reagents, concentrations, and molecular weights different than Applicant's claimed invention, but there is no teaching in Chait that the concentration of polyethylene glycol and dextran, or the molecular weight of dextran in Chait's solution for determining forms of a protein composition would achieve a conductivity corresponding to the conductivity of the claimed solution, *i.e.*, corresponding to the conductivity of blood having a known packed cell volume (hematocrit). Blood, being a solution having a limited range of analyte concentrations and cells, does not have an infinite range of conductivity. In other words, blood, even if blood could have a packed cell volume (hematocrit) of 0% (which would not be compatible with life) to 100% (also not compatible with life), does not represent all possible ranges of conductivity of a solution but only a limited subset of ranges.

Consequently, Applicants submit that even if Chait's solution has a conductivity, there is no reason provided in Chait or by the Examiner to justify that Chait's solution would inherently have a conductivity corresponding to a known hematocrit level.

For all these reasons, Applicants submit that Chait is an improper reference under 35 U.S.C. 102(b) and respectfully request that the rejection of claim 25 be reconsidered and withdrawn.

Rejection of Claims 1-6, 8-11, and 18-22 under 35 U.S.C. 102(b)

Claims 1-6, 8-11, and 18-22 stand rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Ryan (U.S. Patent No. 5,849,517, "Ryan").

Claim 1 has been amended to recite a reference solution comprising 7-15% of a water soluble polymer by weight, 6-10% of a glycol by weight, and 5-10% of a polysaccharide by weight. The reference solution has a conductivity corresponding to a known hematocrit level.

Ryan teaches a method and composition for fixing and stabilizing tissues, cells, and cell components (abstract). The solvent for Ryan's fixative solution may include an alcohol (col. 7, lines 6-7) which may include one or more alkanols and/or polyols such as ethylene glycol or propylene glycol (col. 4, lines 23-25). The fixative may also include sugars, such as the polysaccharides, according to Ryan, glucose and sucrose (col. 7, lines 58-60).

Accordingly, while Ryan teaches polyethylene glycol, ethylene glycol and a polysaccharide, such as glucose and sucrose, Applicants submit that Ryan is an improper anticipatory reference as Ryan fails to teach a reference solution comprising a 7-15% of a water soluble polymer by weight, 6-10% of a glycol by weight, and 5-10% of a polysaccharide by weight. In fact, the maximum amount of polyethylene glycol taught by Ryan is up to about 1% by weight (col. 4, lines 32-33), an amount far below Applicants' claimed range for a water soluble polymer or a glycol.

Further, Ryan's cell fixative, like Chait's solution discussed above, is a solution assembled with specific reagents and concentrations of those reagents to achieve a solution that is useful for an application, fixing cells, that is unrelated to Applicants' claimed reference solution. Not only are Ryan's reagents and concentrations different than Applicant's claimed invention, there is no teaching that the concentration of polyethylene glycol and a polysaccharide in Ryan's cell fixing solution would achieve a conductivity corresponding to the conductivity of the claimed solution, *i.e.*, corresponding to the conductivity of blood having a known packed cell volume (hematocrit).

Accordingly, Applicants respectfully request that the rejection of claim 1 and claims 2-6, 8-11, and 18-22 depending from claim 1 under 35 U.S.C. 102(b) in view of Ryan be reconsidered and withdrawn.

Rejection of Claims 7 and 23-26 under 35 U.S.C. 103(a)

Claims 7 and 23-26 stand rejected under 35 U.S.C. 103(a) as allegedly being obvious over Ryan.

Claim 7 depends from amended claim 1 and recites that the polysaccharide is dextran. Applicants submit that claim 7 is patentable at least for the same reasons that independent claim 1 is patentable over Ryan as described above. Applicants submit that even if it would have been obvious to one of ordinary skill in the art to use dextran as the claimed polysaccharide, which Applicants submit it would not, claim 7 is patentable because it depends from claim 1 which is neither anticipated nor obvious in view of Ryan. Accordingly, Applicants request that the rejection of claim 1 under 35 U.S.C. 103(a) in view of Ryan be reconsidered and withdrawn.

Amended claim 23 recites a reference solution comprising 7-15% polyethylene glycol by weight, 6-10% ethylene glycol by weight, and 5-10% dextran by weight. The teachings of Ryan have been discussed previously. Claim 23 is patentable because Ryan fails to disclose each and every element of claim 23. In particular, Ryan fails to teach a solution comprising 7-15% polyethylene glycol by weight, 6-10% ethylene glycol by weight, and 5-10% dextran by weight. Rather, Ryan teaches that the "preferred concentration of polyethylene glycol is up to about 1%" (col. 4, lines 32-33), an amount far below Applicants' claimed range. Further, Ryan does not teach or suggest 5-10% dextran by weight or 6-10% ethylene glycol by weight. In fact, Ryan does not teach or suggest a 5-10% by weight of any polysaccharide or any % weight for ethylene glycol.

Further, as discussed above, Ryan fails to teach or suggest that Ryan's solution has a conductivity corresponding to a known hematocrit level.

For these reasons and the reasons given above with respect to Ryan, Applicants submit that claim 23 and claim 24 depending therefrom are patentable in view of Ryan and respectfully request that the rejection be reconsidered and withdrawn.

Amended claim 25 recites a reference solution comprising 7-11% polyethylene glycol by weight and 5-9% dextran by weight, wherein the dextran has a molecular weight ranging from about 8,000 to about 40,000. The solution has a conductivity corresponding to a known

hematocrit level. The teachings of Ryan have been discussed previously. Applicants submit that even if it would have been obvious to one of ordinary skill in the art to use dextran as the claimed polysaccharide, which Applicants submit it would not, claim 25 is patentable because Ryan fails to disclose each and every remaining aspect of claim 25. In particular, Ryan fails to teach a solution comprising 7-11% polyethylene glycol by weight and 5-9% dextran by weight. Rather, as discussed above, Ryan teaches that the "preferred concentration of polyethylene glycol is up to about 1%" (col. 4, lines 32-33), an amount far below Applicants' claimed range. Further, Ryan does not teach or suggest dextran, let alone 5-10% by weight of dextran or any polysaccharide. Moreover, because Ryan fails to disclose dextran, Ryan likewise fails to disclose dextran having a molecular weight ranging from about 8,000 to about 40,000 as claimed by Applicants.

Further, as discussed above, Ryan fails to teach or suggests that Ryan's solution has a conductivity corresponding to a known hematocrit level.

For these reasons, Applicants submit that claim 25 and claim 26 depending therefrom are patentable in view of Ryan and respectfully request that the rejection be reconsidered and withdrawn.

Rejection of Claims 1-5, 8-11, 15-22, and 27-28 under 35 U.S.C. 103(a)

Claims 1-5, 8-11, 15-22, and 27-28 stand rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Young *et al.* (U.S. Patent No. 4,686,479, "Young").

Claim 1 recites a reference solution comprising 7-15% of a water soluble polymer by weight, 6-10% of a glycol by weight, and 5-10% of a polysaccharide by weight. The solution has a conductivity corresponding to a known hematocrit level.

Young teaches a control solution comprising an aqueous solution of ion species at a known concentration and an ion activity enhancing agent such as a polyol selected from glycerol and polyalkyl glycols (col. 3, lines 22-27). Young fails to teach that Young's solution contains a polysaccharide. Young also discloses that the ion activity enhancing agents are polar, water-miscible organic compounds such as polyethylene glycol, glycerol, and polypropylene glycol (col. 11, lines 56-59). The solution has a conductivity representative of a known equivalent hematocrit level (col. 3, lines 22-29).

However, in contrast to Applicants' claimed invention, Young fails to teach a reference solution comprising 7-15% of a water soluble polymer by weight, 6-10% of a glycol by weight, and 5-10% of a polysaccharide by weight. In fact, Applicants submit that Young fails to teach a polysaccharide, let alone 5-10% of a polysaccharide by weight in a reference solution.

Further, as acknowledged by the Examiner, Young fails to teach that the control solution contains more than one of the disclosed ion activity enhancers (Office action, page 6). Accordingly, even if, as alleged by the Examiner, it were obvious to one of ordinary skill in the art to include both polyethylene glycol and glycerol, which Applicants submit it is not, Applicants submit that neither Young nor the rationale provided by the Examiner provides any disclosure of Applicants' claimed ranges of the water soluble polymer or glycol.

For all these reasons, Applicants submit that Young fails to obviate Applicant's claimed invention. Accordingly, Applicants respectfully request that the rejection of claim 1 and claims 2-5, 8-11, and 15-22 depending therefrom be reconsidered and withdrawn.

Amended claim 27 recites a method of calibrating an instrument comprising introducing a reference solution comprising a water soluble polymer, a glycol, and a polysaccharide. The reference solution has a conductivity corresponding to a known hematocrit level.

The teachings of Young have been discussed above. As acknowledged by the Examiner, Young fails to teach a control solution that contains more than one of Young's disclosed ion activity enhancers (Office action, page 6). However, the Examiner suggests it would be obvious to one of ordinary skill in the art to include both polyethylene glycol and glycerol together in a reference solution. Applicants' submit that even it were obvious to do so, which Applicants' submit it would not be, Young fails to teach including a polysaccharide in the reference solution. Accordingly, Applicants submit that the Examiner has failed to establish a *prima facie* case of obviousness of the claimed invention.

Accordingly, Applicants respectfully request that the rejection of claim 27 and claim 28 depending therefrom be reconsidered and withdrawn.

Rejection of Claims 12-14 under 35 U.S.C. 103(a)

Claims 12-14 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Young in view of Nova BioMedical Corp.'s Product Information Insert ("Nova").

Claims 12-14 depend from amended claim 1. Therefore, Applicants submit that claims 12-14 are patentable at least for the same reasons that claim 1 is patentable. Applicants submit that Nova fails to remedy the deficiencies of each of the Ryan and Young references over which claim 1 was rejected. In particular, Nova fails to disclose any of a water soluble polymer, glycol, or polysaccharide, let alone any percentage by weight of a water soluble polymer, glycol, or polysaccharide.

Accordingly, Applicants respectfully request that the rejection of claims 12-14 be reconsidered and withdrawn.

Rejection of Claims 6-7 and 23-26 under 35 U.S.C. 103(a)

Claims 6-7 and 23-26 stand rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Young in view of Mast (U.S. Patent No. 3,920,580, "Mast").

Claims 6-7 depend from amended claim 1. Therefore, Applicants submit that claims 6-7 are patentable at least for the same reasons that claim 1 is patentable over Young.

Further, Applicants submit that claims 6-7 are patentable over Young in view of Mast because claim 1 is patentable over Young in view of Mast for the following reasons.

The teachings of Young have been discussed above. In particular, Young teaches a control solution comprising an aqueous solution of ion species at a known concentration and an ion activity enhancing agent such as a polyol selected from glycerol and polyalkyl glycols (col. 3, lines 22-27). Young also discloses that the ion activity enhancing agents as including polar, water-miscible organic compounds such as polyethylene glycol, glycerol, and polypropylene glycol (col. 11, lines 56-59). However, as acknowledged by the Examiner, Young fails to teach a control solution that contains more than one of Young's disclosed ion activity enhancers (Office action, page 6). Moreover, Young's reference solution does not include a polysaccharide, an element of Applicants' claimed invention.

Mast teaches a control solution including glucose and an antidiffusing agent such as polyethylene glycol or dextran (col. 2, lines 7-27). The solution is suitable for use with dry

reagent glucose indicating strips (col. 2, lines 7-9). The Examiner suggests that it would have been obvious to a skilled artisan at the time of the invention to add the dextran of Mast's solution to the control solution of Young in order to control the viscosity and osmotic pressure of Young's solution (Office action, page 7).

Applicants submit that a skilled artisan would not have found it obvious to add the dextran of Mast's solution to Young's solution. Firstly, Mast teaches that dextran or another antidiffusing agent is believed to modify the viscosity and the osmotic pressure of the glucose solution which avoids the adverse effects otherwise encountered with glucose control solutions (col. 2, lines 7-11 and 16-21), *i.e.*, inconsistencies with the amount of glucose in solution and lack of reproducibility (col. 1, lines 45-50). However, Young does not teach or suggest that his solution contains glucose. Accordingly, Applicants submit that a skilled artisan would have no reason to believe that adding dextran to Young's solution would favorably affect the osmotic pressure or viscosity of Young's solution which is not a glucose solution. Moreover, osmotic pressure and viscosity have no bearing on conductivity, in particular the conductivity related to packed cell volume (hematocrit) of blood.

Further, Young's control solution is designed to have a conductivity representative of a known hematocrit level (col. 3, lines 27-30). Applicants submit that there is no evidence in either Young or Mast or provided by the Examiner that adding dextran to Young's solution would permit Young's solution to maintain a conductivity representative of a known hematocrit level.

For all these reasons, Applicants submit that claim 1 is not obvious over Young in view of Mast, and that therefore, claims 6 and 7 depending therefrom are likewise not obvious.

Amended claim 23 recites a reference solution comprising 7-15% polyethylene glycol by weight, 6-10% ethylene glycol by weight, and 5-10% dextran by weight. The reference solution has a conductivity corresponding to a known hematocrit level. Applicants submit that the Examiner has failed to establish a *prima facie* case of obviousness against claim 23 over Young in view of Mast because neither Young or Mast discloses ethylene glycol, let alone a reference solution comprising 6-10% ethylene glycol by weight. Accordingly, Applicants submit that claim 23 and claim 24 depending therefrom are not obvious over Young in view of Mast.

Applicants therefore respectfully request that the rejection of claims 23 and 24 be reconsidered and withdrawn.

Amended claim 25 recites a reference solution comprising 7-11% polyethylene glycol by weight and 5-9% dextran by weight, wherein the dextran has a molecular weight ranging from about 8,000 to about 40,000 and wherein the reference solution has a conductivity corresponding to a known hematocrit level. Applicants submit that the Examiner has failed to establish a *prima facie* case of obviousness against claim 25 over Young in view of Mast because neither Young nor Mast discloses dextran having a molecular weight in the range from about 8,000 to about 40,000. Accordingly, Applicants submit that claim 25 and claim 26 depending therefrom are not obvious over Young in view of Mast. Applicants therefore respectfully request that the rejection of claims 25 and 26 be reconsidered and withdrawn.

CONCLUSION

Applicants respectfully submit that the pending claims are in condition for allowance and request swift and favorable action. The Examiner is invited to telephone the undersigned attorney to discuss any outstanding issues.

Respectfully submitted,

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Tel. No.: 617.261.3237
Fax No.: 617.261.3175

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/Crystal A. Komm/
Crystal A. Komm
Limited Recognition No. L0363
Attorney for the Applicants
Kirkpatrick & Lockhart Preston Gates Ellis LLP
State Street Financial Center
One Lincoln Street
Boston, MA 02111-2950